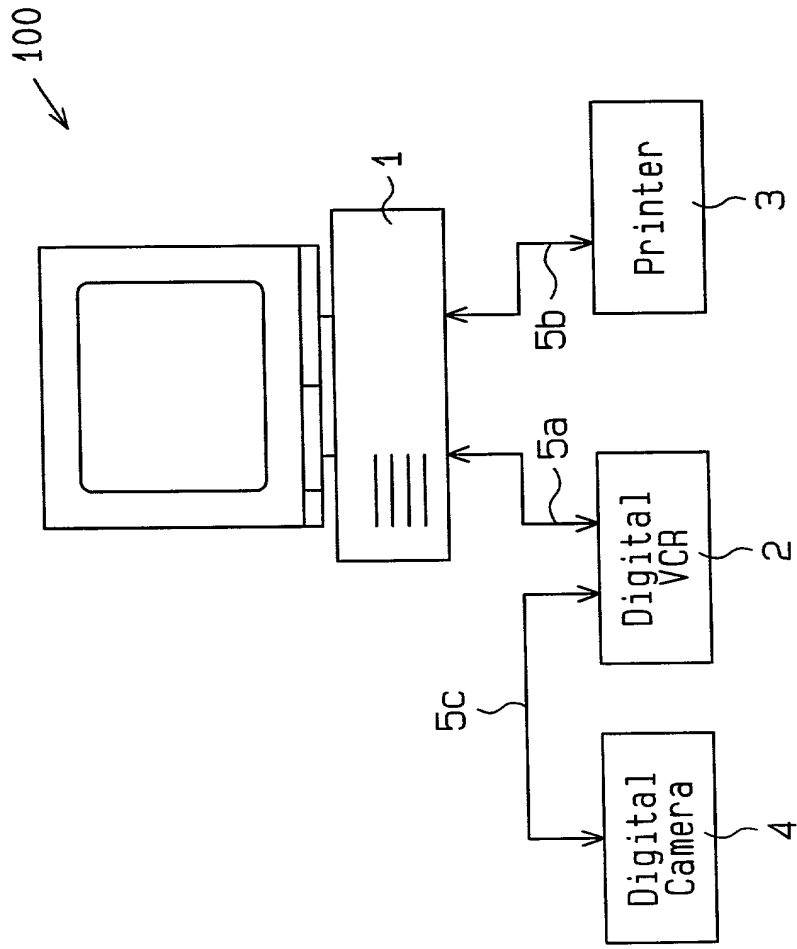
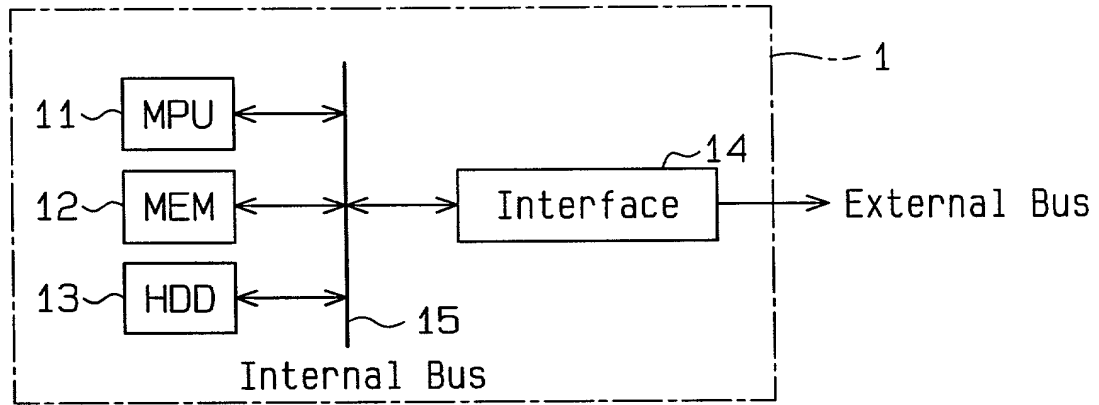


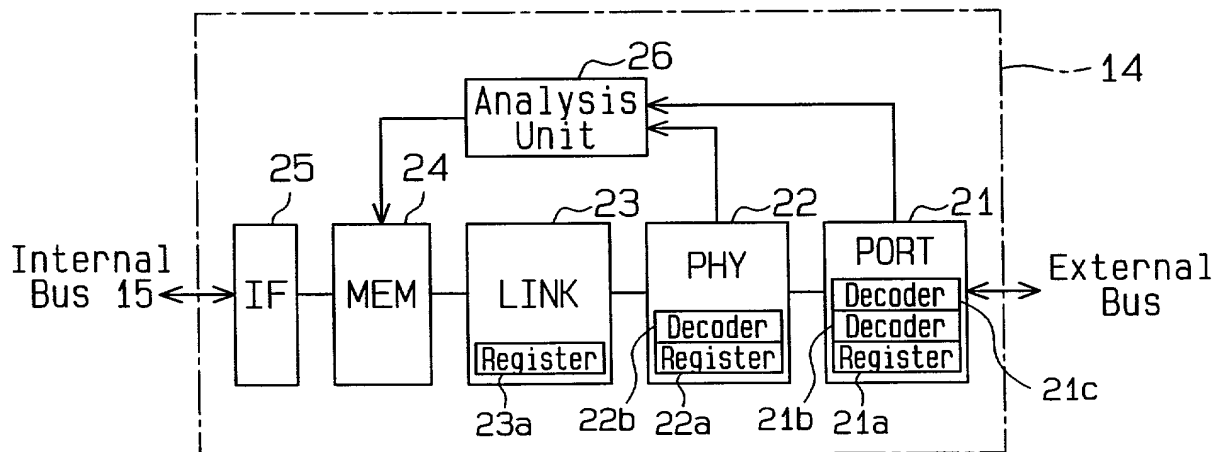
**Fig.1**



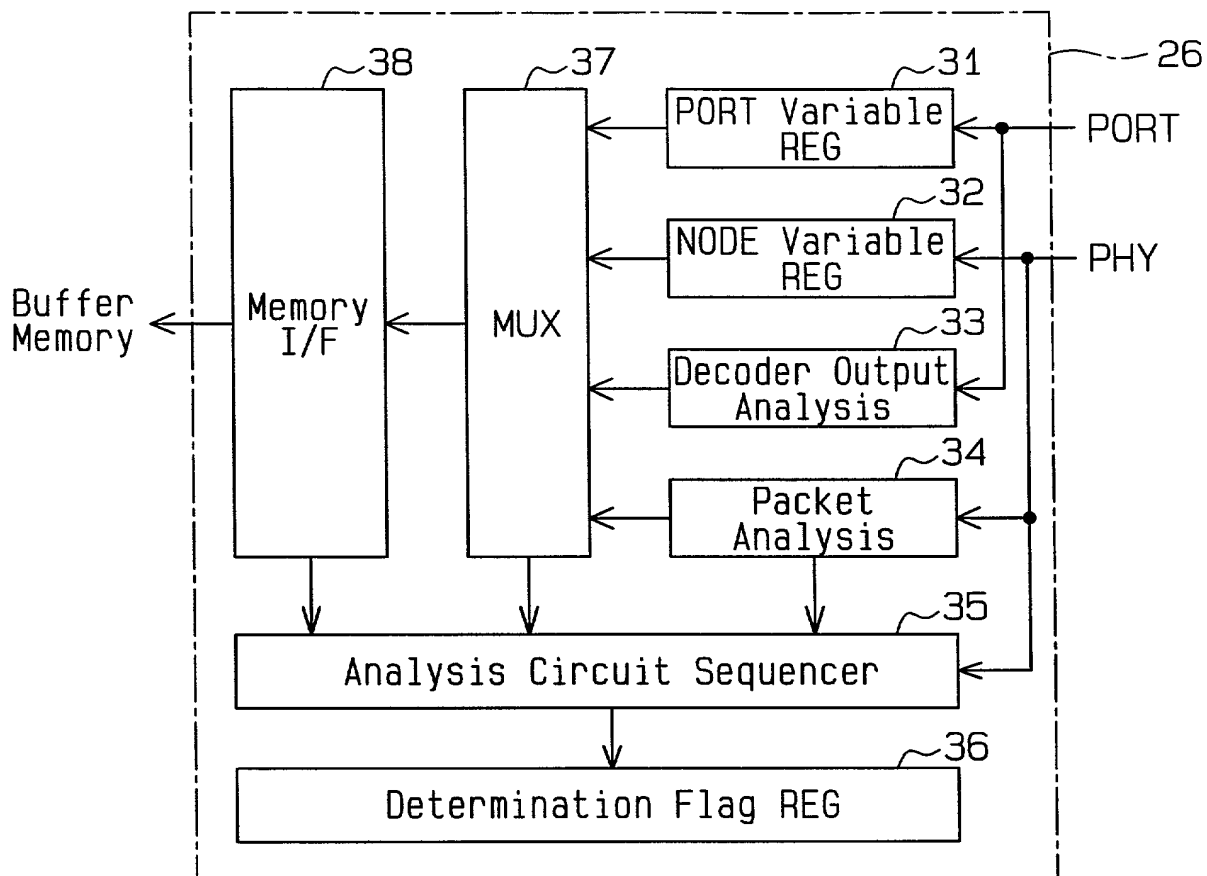
**Fig.2**



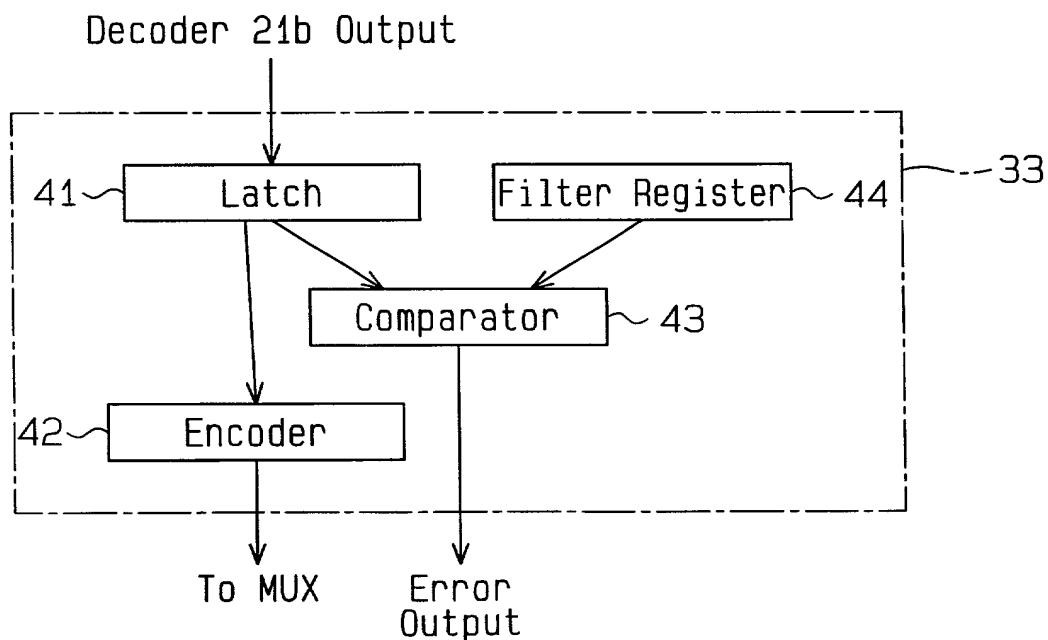
**Fig.3**



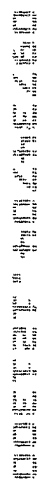
**Fig.4**



**Fig.5**

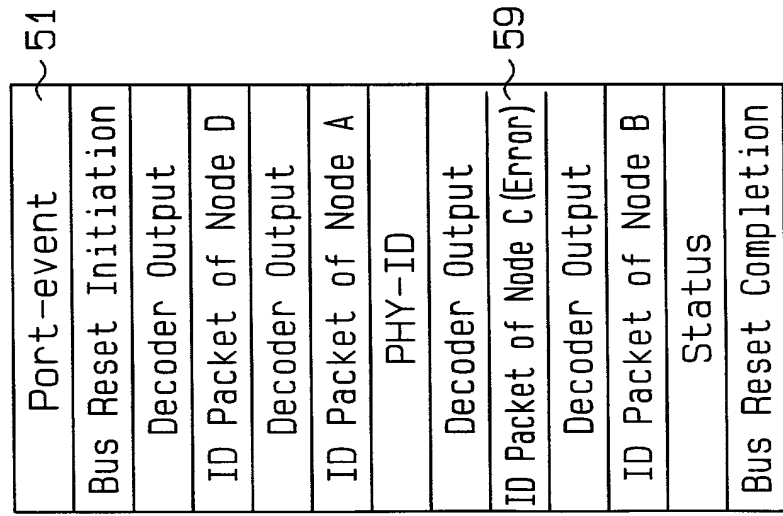


$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6, \alpha_7, \alpha_8, \alpha_9, \alpha_{10}, \alpha_{11}, \alpha_{12}, \alpha_{13}, \alpha_{14}, \alpha_{15}, \alpha_{16}, \alpha_{17}, \alpha_{18}, \alpha_{19}, \alpha_{20}, \alpha_{21}, \alpha_{22}, \alpha_{23}, \alpha_{24}, \alpha_{25}, \alpha_{26}, \alpha_{27}, \alpha_{28}, \alpha_{29}, \alpha_{30}, \alpha_{31}, \alpha_{32}, \alpha_{33}, \alpha_{34}, \alpha_{35}, \alpha_{36}, \alpha_{37}, \alpha_{38}, \alpha_{39}, \alpha_{40}, \alpha_{41}, \alpha_{42}, \alpha_{43}, \alpha_{44}, \alpha_{45}, \alpha_{46}, \alpha_{47}, \alpha_{48}, \alpha_{49}, \alpha_{50}, \alpha_{51}, \alpha_{52}, \alpha_{53}, \alpha_{54}, \alpha_{55}, \alpha_{56}, \alpha_{57}, \alpha_{58}, \alpha_{59}, \alpha_{60}, \alpha_{61}, \alpha_{62}, \alpha_{63}, \alpha_{64}, \alpha_{65}, \alpha_{66}, \alpha_{67}, \alpha_{68}, \alpha_{69}, \alpha_{70}, \alpha_{71}, \alpha_{72}, \alpha_{73}, \alpha_{74}, \alpha_{75}, \alpha_{76}, \alpha_{77}, \alpha_{78}, \alpha_{79}, \alpha_{80}, \alpha_{81}, \alpha_{82}, \alpha_{83}, \alpha_{84}, \alpha_{85}, \alpha_{86}, \alpha_{87}, \alpha_{88}, \alpha_{89}, \alpha_{90}, \alpha_{91}, \alpha_{92}, \alpha_{93}, \alpha_{94}, \alpha_{95}, \alpha_{96}, \alpha_{97}, \alpha_{98}, \alpha_{99}, \alpha_{100}$

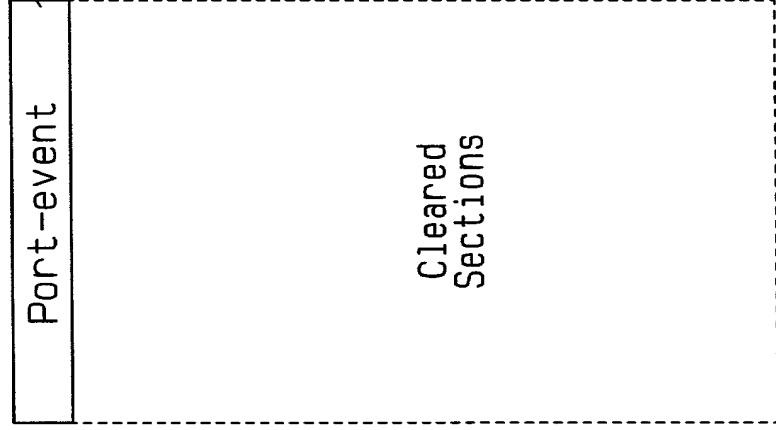
[illegible][illegible]



**Fig. 9(a)**



**Fig. 9(b)**



**Fig. 9(c)**

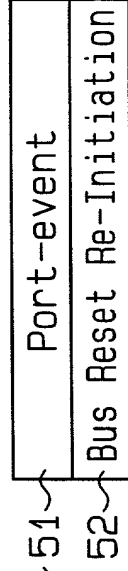


Fig.10(a)

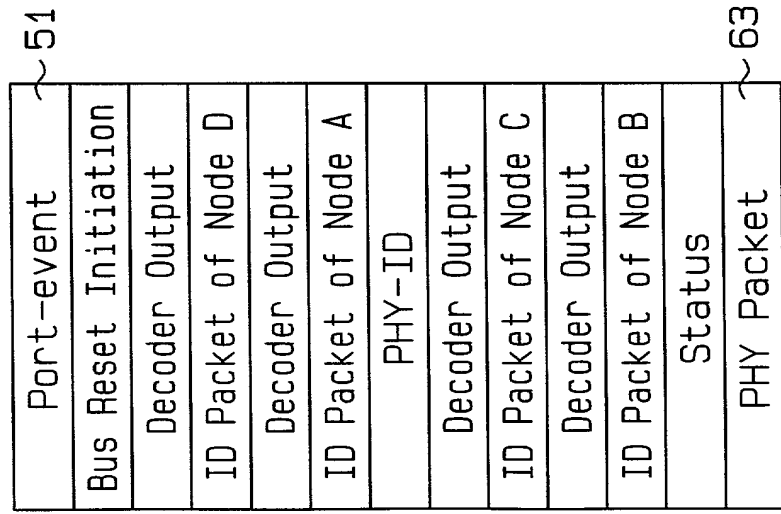


Fig.10(b)

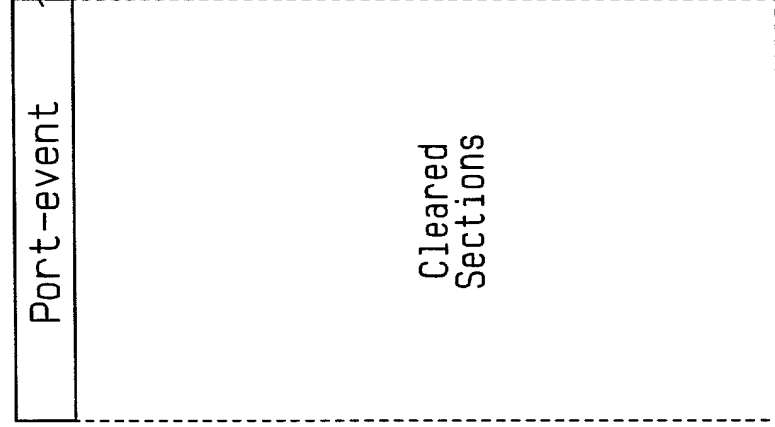


Fig.10(c)

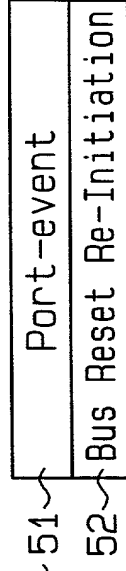


Figure 1 consists of seven sub-graphs labeled (a) through (g), each showing the growth of *E. coli* O157:H7 in ground beef under different treatment conditions. The y-axis for all graphs is  $\log_{10}$  CFU/g, ranging from 0 to 10. The x-axis is time in hours, ranging from 0 to 24. Graph (a) is the control, showing a steady increase in bacterial concentration from approximately  $10^1$  to  $10^8$  CFU/g over 24 hours. Graphs (b) through (g) show the effect of heating at 100°C for increasing durations: 15 min, 30 min, 45 min, 60 min, 90 min, and 120 min, respectively. In all heated samples, the bacterial concentration decreases over time, with the rate and extent of reduction increasing with both temperature and duration. By 24 hours, the bacterial concentration in the 120-minute heated sample (g) is below the detection limit ( $10^0$  CFU/g).

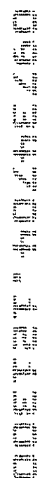
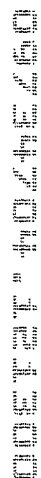
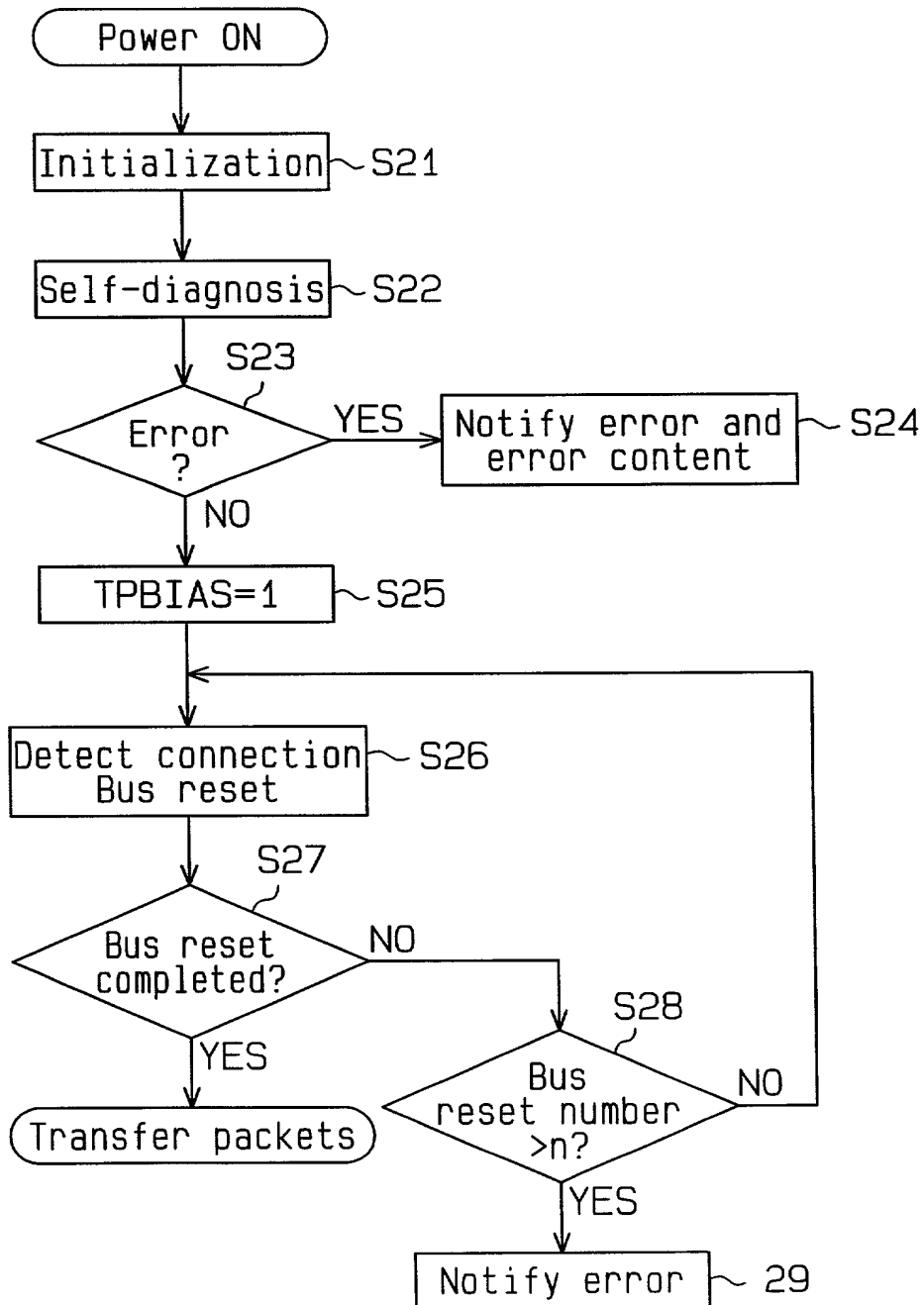


Figure 1 consists of seven sub-graphs labeled (a) through (g), each showing the growth of *E. coli* O157:H7 in ground beef under different treatment conditions. The y-axis for all graphs is  $\log_{10}$  CFU/g, ranging from 0 to 10. The x-axis is time in hours, ranging from 0 to 24. Graph (a) is the control, showing a steady increase in bacterial concentration from approximately  $10^1$  to  $10^8$  CFU/g over 24 hours. Graphs (b) through (g) show the effect of heating at 100°C for increasing durations: 15 min, 30 min, 45 min, 60 min, 90 min, and 120 min, respectively. In all heated samples, the bacterial concentration decreases over time, with the rate and extent of reduction increasing with both temperature and duration. By 24 hours, the bacterial concentration in the 120-minute heated sample (g) is below the detection limit ( $10^0$  CFU/g).

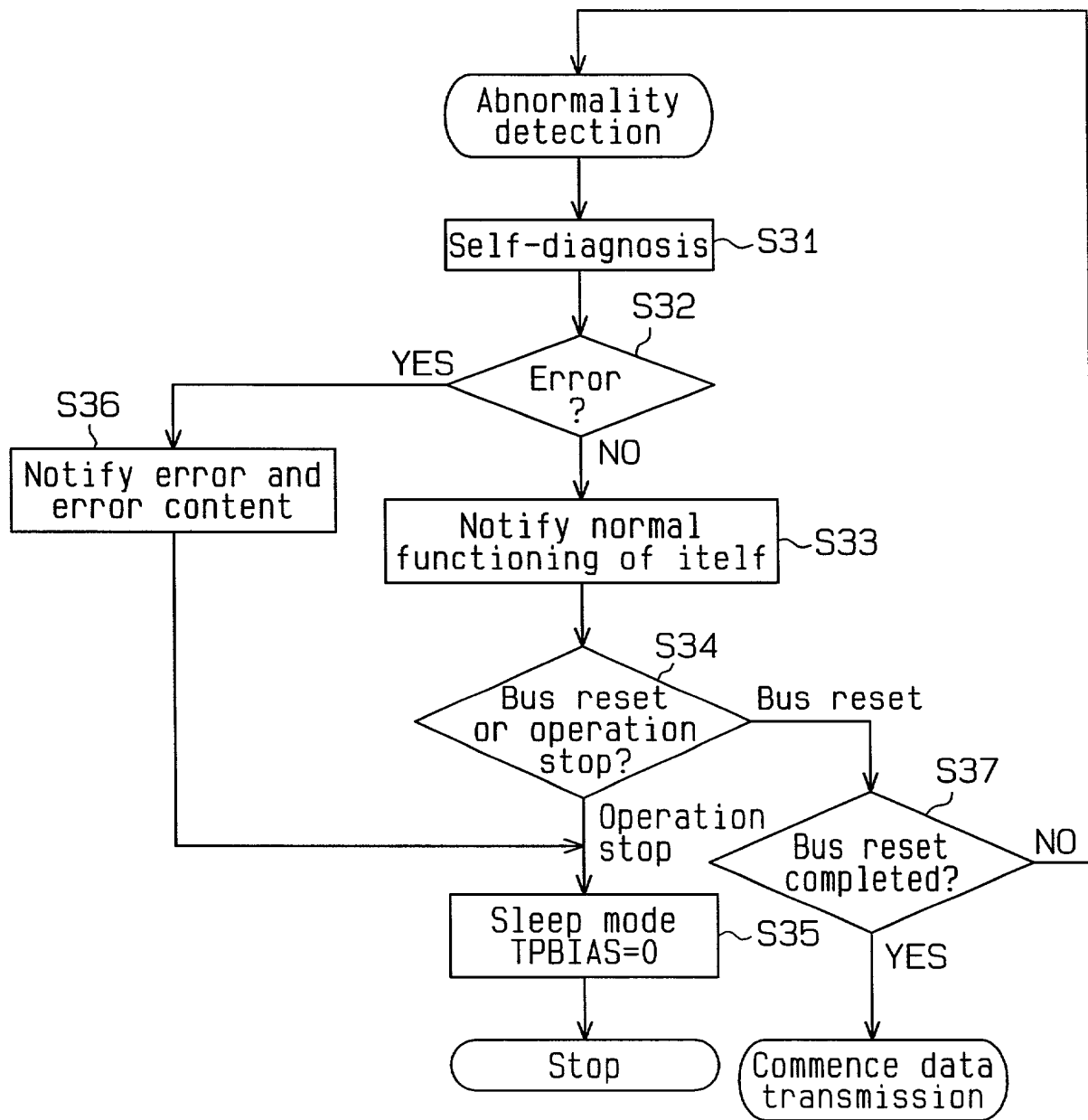




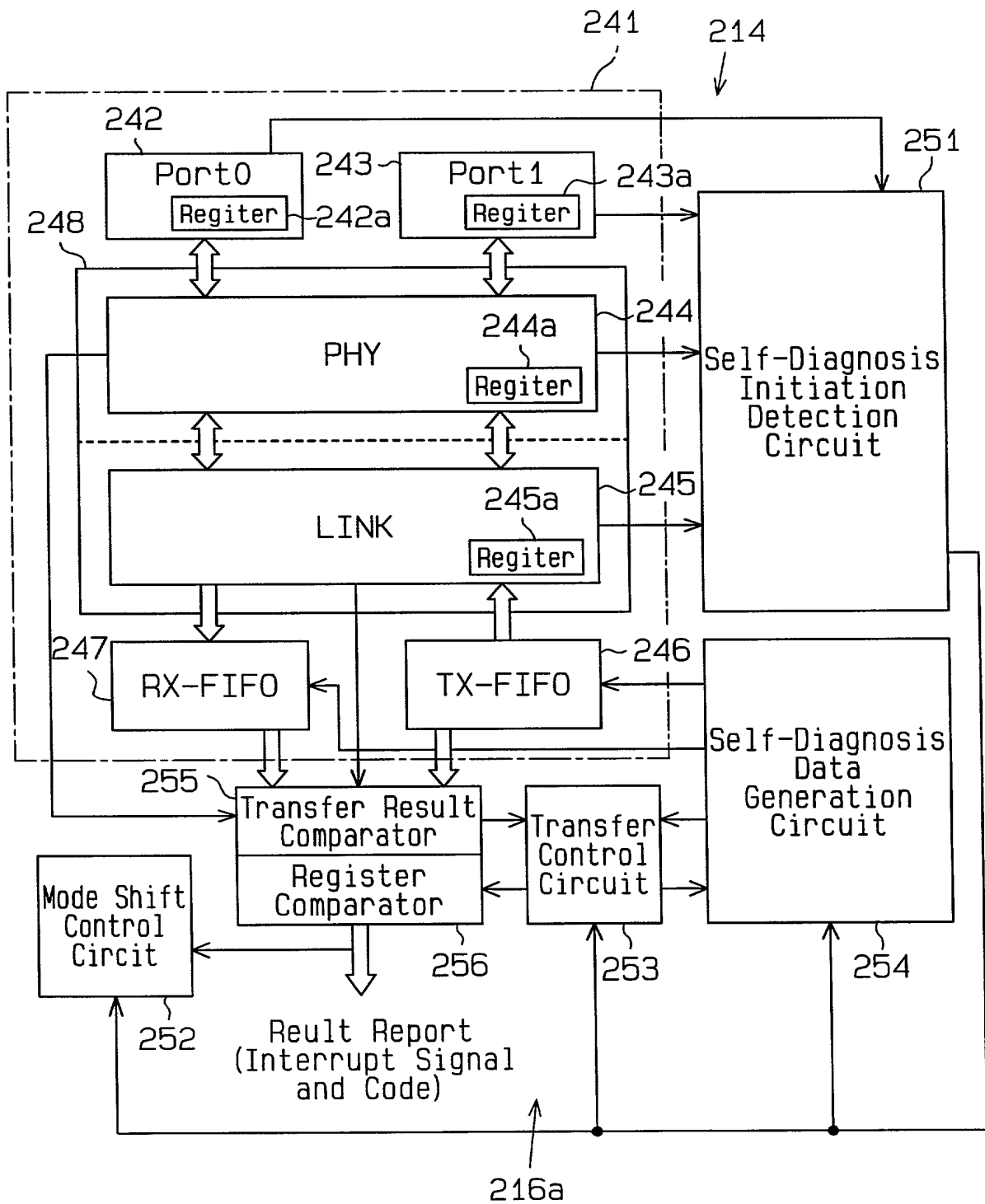
**Fig.13**



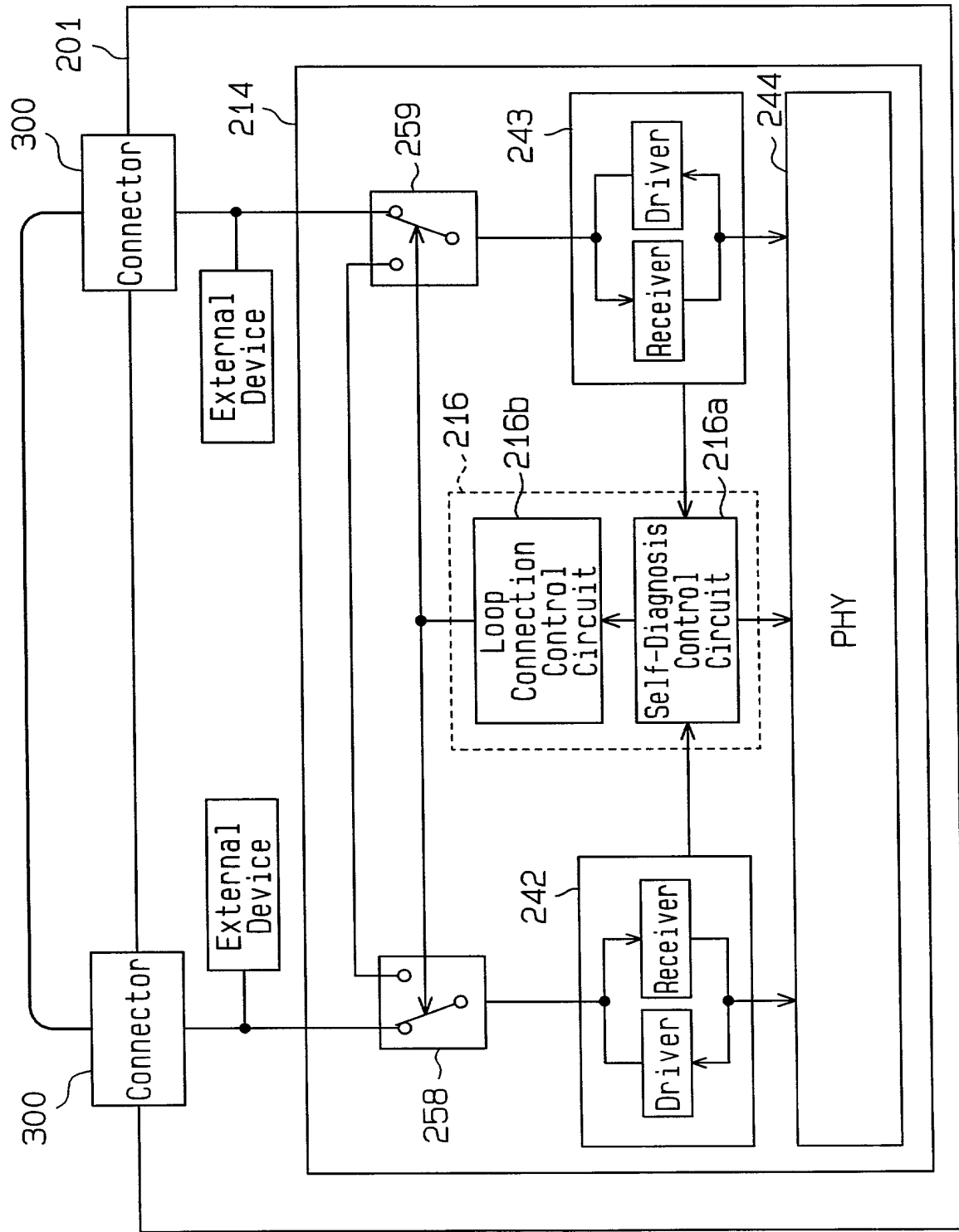
Variable	Mean	SD	Min	Max	Median	Mode	Skewness	Kurtosis	Shapiro-Wilk	Normality
Age	35.2	12.5	20	65	30	35	0.15	2.8	0.95	Normal
Gender	1.2	0.4	1	2	1	1	0.05	1.2	0.98	Normal
Marital Status	1.8	0.8	1	3	1	1	0.10	2.5	0.92	Normal
Education	12.5	2.5	8	16	12	12	0.05	2.2	0.96	Normal
Income	1500	500	500	3000	1200	1000	0.10	2.5	0.92	Normal
Occupation	1.5	0.5	1	2	1	1	0.05	1.2	0.98	Normal
Health Status	2.5	0.5	1	3	2	2	0.05	1.2	0.98	Normal
Stress Level	3.5	1.0	1	5	3	3	0.10	2.5	0.92	Normal
Life Satisfaction	4.0	0.8	1	5	4	4	0.05	1.2	0.98	Normal
Resilience	3.0	0.5	1	4	3	3	0.05	1.2	0.98	Normal
Optimism	3.5	0.5	1	4	3	3	0.05	1.2	0.98	Normal
Emotional Stability	3.0	0.5	1	4	3	3	0.05	1.2	0.98	Normal
Self-Esteem	3.5	0.5	1	4	3	3	0.05	1.2	0.98	Normal
Life Satisfaction	4.0	0.8	1	5	4	4	0.05	1.2	0.98	Normal
Resilience	3.0	0.5	1	4	3	3	0.05	1.2	0.98	Normal
Optimism	3.5	0.5	1	4	3	3	0.05	1.2	0.98	Normal
Emotional Stability	3.0	0.5	1	4	3	3	0.05	1.2	0.98	Normal
Self-Esteem	3.5	0.5	1	4	3	3	0.05	1.2	0.98	Normal



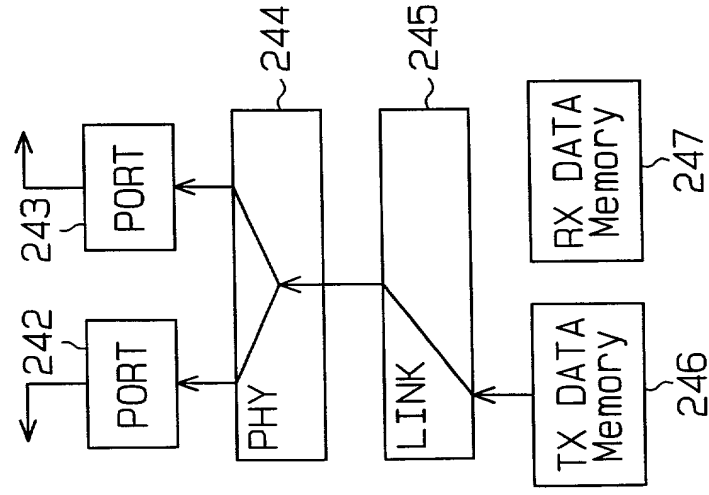
**Fig.15**



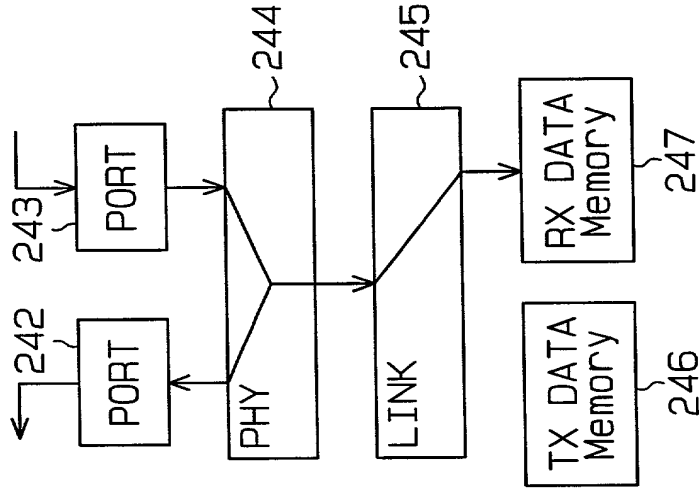
**Fig. 16**



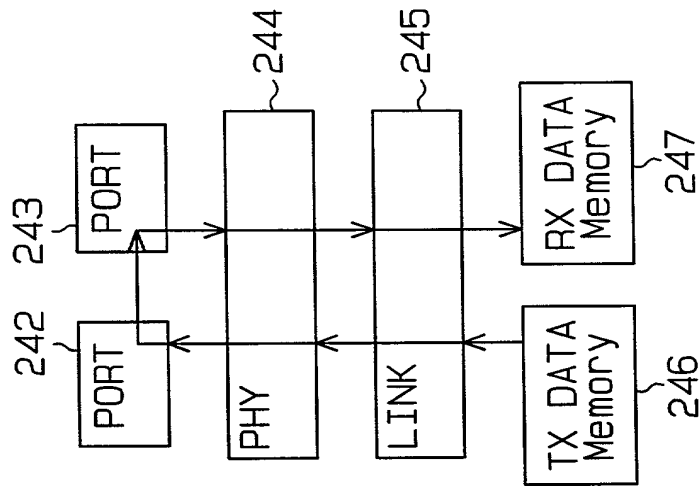
**Fig.17 (a)**



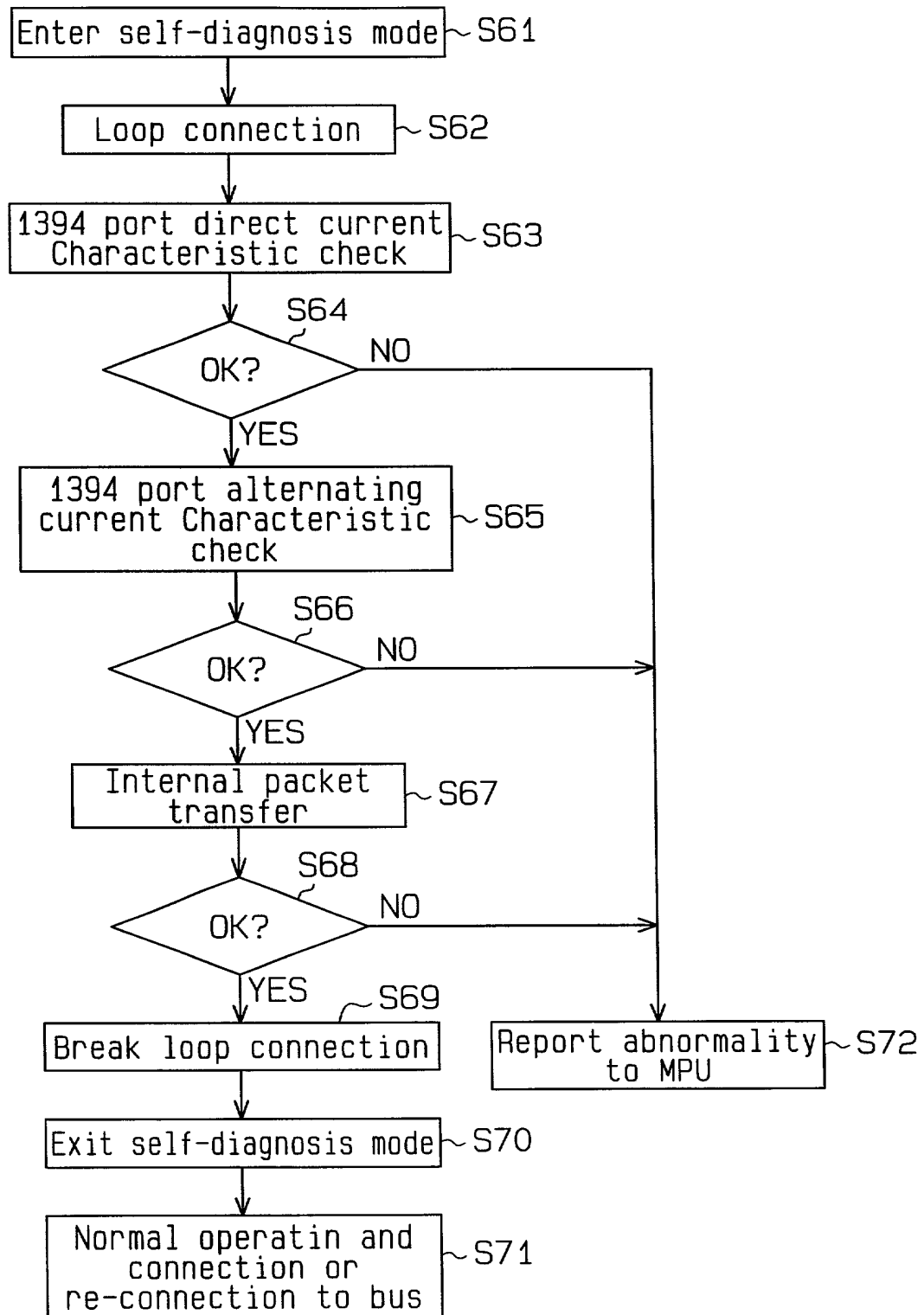
**Fig.17 (b)**



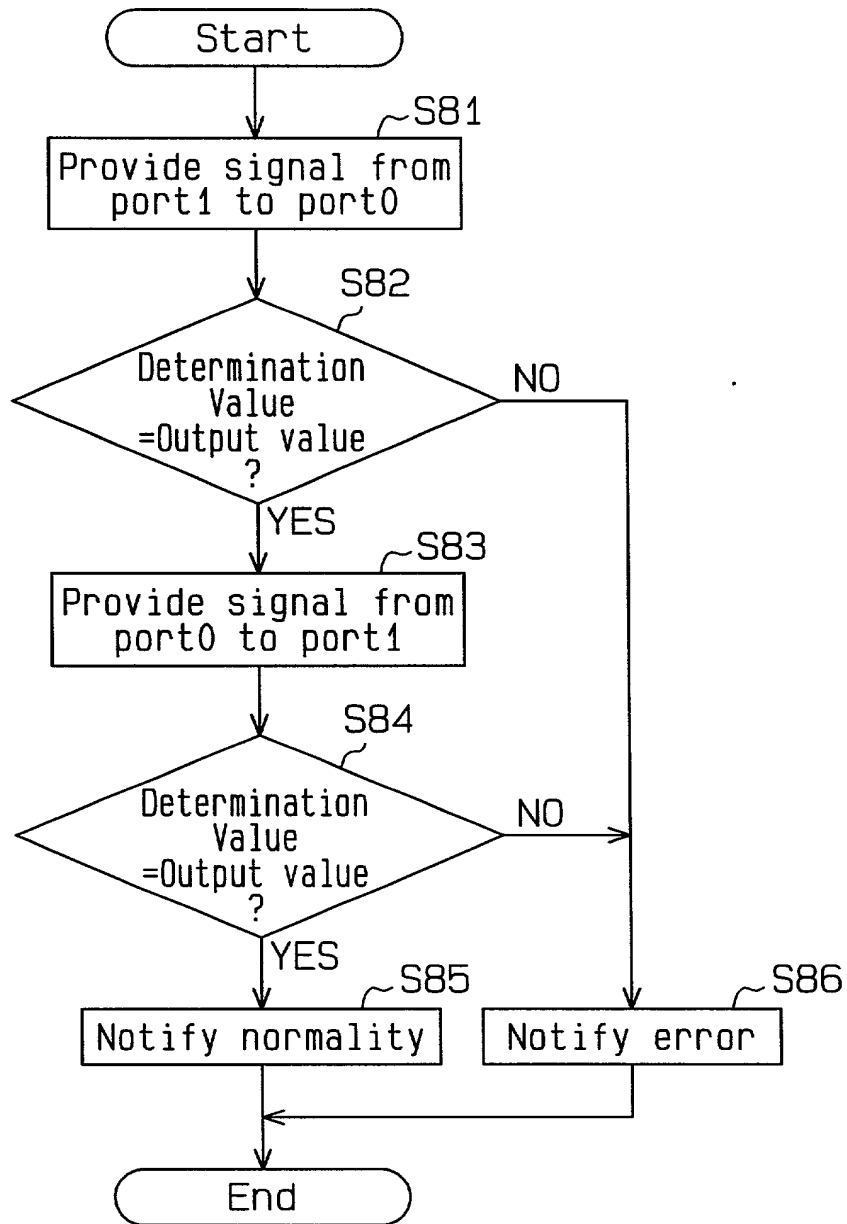
**Fig.17 (c)**



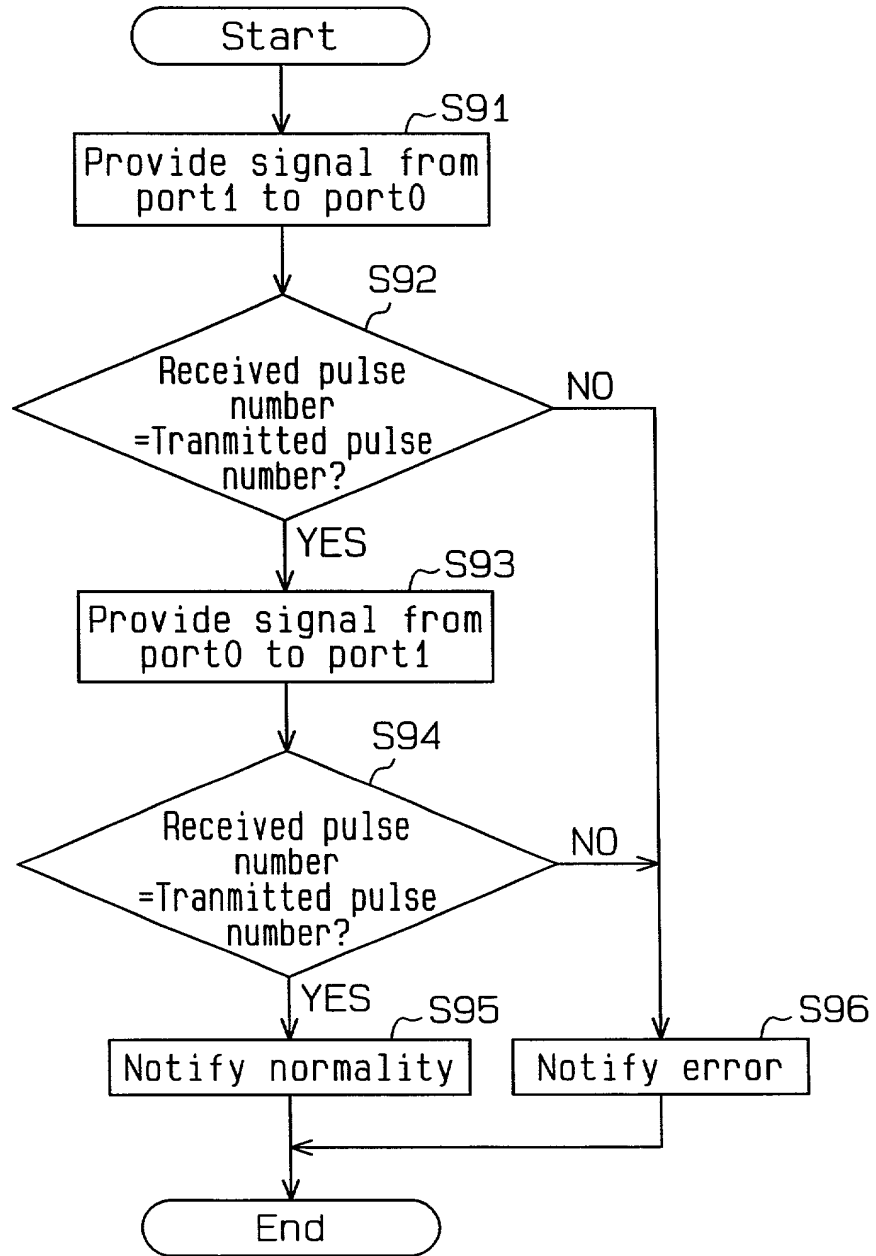
**Fig.18**



**Fig.19**



**Fig.20**





**Fig.21**

